

Tuberculosis - Massachusetts

In 2014, 199 cases (incidence rate 3.0 per 100,000 population) of active tuberculosis (TB) were reported to, and verified by, the Massachusetts Department of Public Health. This is the same case rate as in 2013 and the same case rate as the United States (U.S.) as a whole. Multi-drug resistant TB (MDR-TB), managing TB in persons with complex medical and social needs, and evidence of local transmission are foci of high concern in Massachusetts.

Drug Resistance

In 2014, 150 (75%) of the 199 TB cases were bacteriologically confirmed by positive culture for *Mycobacterium tuberculosis*.

Drug resistance to one or more anti-TB drugs was detected in 36 (25%) of 146 TB cases that had drug susceptibility testing completed. Resistance to isoniazid (INH), either alone or in combination with other agents, was seen in 18% of these 146 cases. Drug resistance of all types has been increasing since 2012.

In 2014, there were four (3%) new cases of MDR-TB (defined as resistance to at least INH and rifampin [RIF]). There were no cases of XDR-TB (extremely drug resistant, defined as MDR-TB with additional resistance to any fluoroquinolone and at least one injectable second-line drug [amikacin, kanamycin or capreomycin]). With MDR-TB increasing worldwide, the presence of MDR-TB in Massachusetts remains a focus of TB program activities.

Race/Ethnicity

Racial/ethnic minorities are disproportionately affected by TB; 85% of TB cases in 2014 were diagnosed in members of minority groups. The TB case rate in 2014 was 25.7 per 100,000 among Asian non-Hispanic residents, 10.8 among black non-Hispanic residents, and 3.46 among Hispanic residents; compared with 0.55 among white non-Hispanic residents. Compared with white residents, the relative risk of being diagnosed with TB in 2014 was approximately 46.7 times higher among Asian, 10.8 times higher among black, and 6.3 times higher among Hispanic residents.

Higher Risk Groups

Non-U.S. born (persons born outside the United States and territories): Among 199 cases of TB in 2014, 166 (83%) were reported in non-U.S. born persons. Eighty four (42%) cases were from five countries: 23 (12%) born in China, 19 (10%) born in Vietnam, 15 (8%) each among persons born in Haiti and Cambodia, and 12 (6%) from India. The remaining 115 cases (58%) occurred in persons born in 32 additional countries.

Homeless: Of the 199 cases of TB reported in 2014, eight (4%) were in persons reported to have been homeless. Three (38%) were U.S.-born individuals.

Incarcerated: In 2014, four cases of TB (2%) were diagnosed in persons in correctional facilities.

HIV co-infected (preliminary): Fourteen persons (7%) diagnosed with TB in 2014 were known to be co-infected with human immunodeficiency virus (HIV), a slight increase from 2013.

Children: In 2014, seven cases of TB were diagnosed in children under 15 years of age (4% of cases, incidence rate <1 per 100,000 among children <15 years old). Five of the seven children (71%) were born in the U.S.

Characteristics of TB Cases 2014 (N=199)	
Demographics	
Sex	# (%)
Male	118 (59%)
Female	81 (41%)
Race Ethnicity	
White, non-Hispanic	29 (15%)
Black, non-Hispanic	47 (24%)
Hispanic	33 (17%)
Asian	90 (45%)
Origin of Birth	
U.S. born	33 (17%)
Non-U.S. born	166 (83%)
Age (years)	
<5	3 (2%)
5-14	4 (2%)
15-19	5 (3%)
20-24	16 (8%)
25-44	73 (37%)
45-64	53 (27%)
65+	45 (23%)
Clinical Presentation	
Primary Site of Disease	
Pulmonary	105 (53%)
Extra-pulmonary	57 (29%)
Both	37 (19%)
Chest X-Ray Results	(N=142)
Cavitary disease only	21 (15%)
Miliary disease only	2 (1%)
Cavitary and miliary	0 (0%)
Non-cavitary disease only	105 (74%)
Normal [chest X-ray]	1 (<1%)
X-ray not done (CT only)	13 (9%)
Higher Risk Groups* (N=199)	
Non-U.S. born	166 (83%)
Children <15 years of age	5 (3%)
Prison/jail	4 (2%)
Homeless	8 (4%)
Substance abuse*	17 (9%)
HIV co-infection	14 (7%)
Drug Resistance Bacteriologically confirmed cases with drug sensitivity results (N=146)	
Pattern	
Resistance to at least 1 drug	36 (25%)
Resistance to at least INH	26 (18%)
Resistance to at least INH and RIF (MDR-TB)	4 (3%)
+ Not mutually exclusive groups	
* Alcohol, injecting and/or non-injecting drug abuse	